Multiple basis wavelet denoising using Besov projection

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Abstract:
Wavelet-based image denoising algorithm depends upon the energy compaction pro of wavelet transforms. However, for many real-world images, we cannot expect gooc energy compaction in a single wavelet domain, because most real-world images cons of components of a variety of smoothness. We can relieve this problem by using mul wavelet bases to match different characteristics of images. In this paper, we propose novel image denoising algorithm that uses multiple wavelet bases. By establishing a relationship between the deterministic Besov space theory and the wavelet-domain statistical models, we generalize the Besov theory for finite sampled data. After defir convex sets in Besov spaces that contain the true image, we obtain an estimate of th true image by the method of projection onto convex sets. The algorithm outperforms existing multiple wavelet basis denoising algorithms; in particular, it shows excellent performance at low signal-to-noise ratios

Index Terms:
image restoration wavelet transforms Besov projections energy compaction finite sampled data image denoising wavelet denoising wavelet transforms

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Multiscale contrast enhancement of medical images

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Abstract:
We present results obtained by different contrast enhancement methods applied to medical images. We take into account classical histogram specification, local and wavelet-based techniques and a novel approach for multiscale contrast enhancement The latter, whose rationale grounds in theories of visual perception, exploits a local definition of the Fechner-Weber's contrast within the context of a non-linear scale-sp representation generated by anisotropic diffusion. Our experimental fields concerns a difficult kind of medical images, namely digital mammographic images

Index Terms:
diagnostic radiography image enhancement image representation medical image processin visual perception wavelet transforms Fechner-Weber's contrast anisotropic diffusion digita mammographic images experiment histogram specification local techniques medical imag multiscale contrast enhancement nonlinear scale-space representation visual perception wa based techniques

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16	S17	302	S16 and (wavelet or subband)
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43	S44	12	complex adj wavelet adj transform
44	S45	7	overcomplete adj wavelet adj transform
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